

## Summary:

The City of Houston, the Texas Natural Resource Conservation Commission, and the Houston Regional Monitoring Network sponsored sampling and analysis of PM2.5 samples taken over the course of one year, from 03/11/1997 to 03/12/1998. Objectives of the study were to determine the levels and chemical composition of PM2.5 in Houston and other cities in Texas and to determine the background levels and chemical composition of PM2.5 transported into Houston.

## Acknowledgement:

McMullen, Gene. 2000. NARSTO Texas PM2.5 Sampling and Analysis Study: 1997-1998. Available on-line via [NARSTO Data and Information](#) at the Atmospheric Science Data Center at NASA Langley Research Center, Hampton, Virginia, U.S.A.

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## 1. Data Set Overview:

### Data Set Identification:

Texas PM2.5 Sampling and Analysis Study: 1997-1998

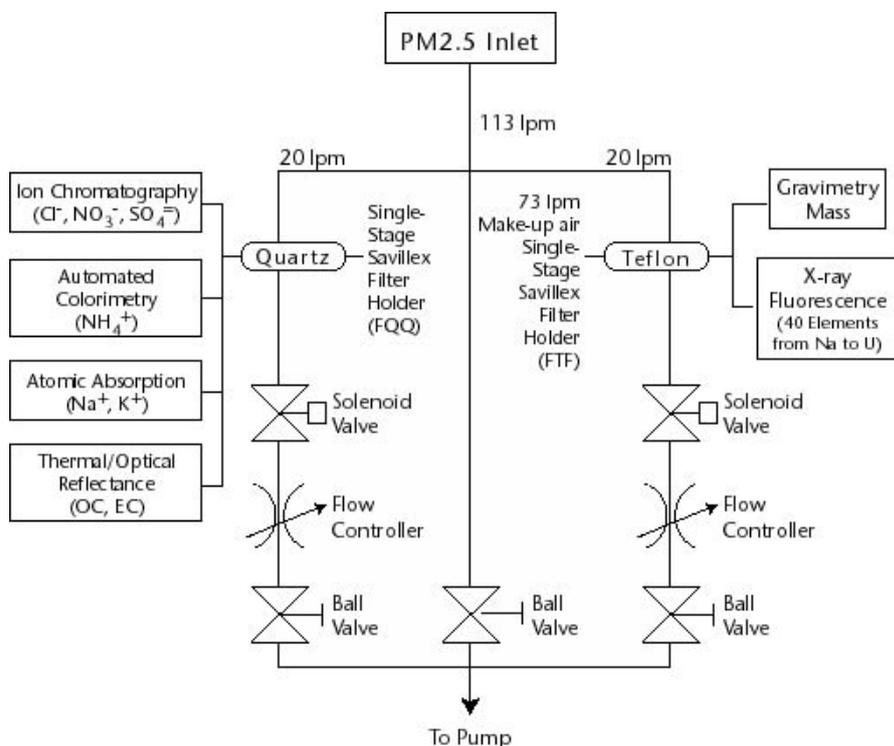
### Data Set Introduction:

The City of Houston, the Texas Natural Resource Conservation Commission, and the Houston Regional Monitoring Network sponsored sampling and analysis of PM2.5 samples taken over the course of one year, from March 11, 1997 to March 12, 1998.

### Objective/Purpose:

Objectives of the study were to determine the amount and chemical composition of PM2.5 in Houston and other cities in Texas and to determine the background levels and chemical composition of PM2.5 transported into Houston.

### Summary of Parameters:



### Discussion:

During the sampling effort, 24-hour PM<sub>2.5</sub> mass measurements were acquired from 15 sites throughout the state of Texas, using DRI's MEDVOL particle samplers. All of the Teflon filters were analyzed for mass by gravimetry and a selected subset of the Teflon and quartz fiber filters were subjected to full chemical analysis.

### Related Data Sets:

Not Applicable.

### Investigator(s):

#### Investigator(s) Name and Title:

Gene McMullen  
Houston Bureau of Air Quality Control

### Title of Investigation:

Texas PM<sub>2.5</sub> Sampling and Analysis Study: 1997-1998

### Contact(s) Information:

Gene McMullen  
Bureau of Air Quality Control  
City of Houston  
7411 Park Place Blvd  
Houston, TX 77087  
USA  
Phone: (713) 640-4209  
Fax:  
E-mail: [houenv@phoenix.net](mailto:houenv@phoenix.net)

## 2. Applications:

These measurements were taken in anticipation of the U.S. EPA revising PM<sub>2.5</sub> and PM<sub>10</sub> NAAQS. These results could be used to establish background PM conditions and determine compliance with new PM standards. Various sampler configurations allow evaluation of data precision, accuracy, and validity.

## 3. Theory of Measurements:

Not Applicable.

#### 4. Acquisition Materials and Methods:

Please refer to the [companion reference document](#) by Tropp et al., 1998, for materials and methods descriptions.

#### 5. Preparation and Description:

##### Data Description:

##### Spatial Characteristics:

##### Spatial Coverage:

Minimum Latitude: 27.8069  
Maximum Latitude: 32.7742  
Minimum Longitude: -106.4828  
Maximum Longitude: -94.0000

Station ID	Station Name	Latitude decimal degrees (+N or -S)	Longitude decimal degrees (+E or -W)	Elevation Meters above Sea Level	Station Type and Location
HC	Greater Houston	29.7333	-95.2569	16	IndustrialSite at 9525 Clinton Dr.
H3	Greater Houston	29.7483	-95.1811	0	Industrial Site at 1504 Haden Dr.
H7	Greater Houston	29.7691	-95.0176	-999	Industrial Site at Baker and Decker Road
HG	Greater Houston	29.2631	-94.8564	0	Background/Transport at 8715 Cessna St. (Galveston)
HT	Greater Houston	30.0394	-95.675	30	Background/Transport at 16822 Kitzman St. (NW Harris County)
SM	Greater Houston	30.1556	-94	-999	Background/Transport at Intersection of Texas Hwys 62 and 12 (Mauriceville)
HW	Greater Houston	29.7247	-95.5036	0	Population Exposure at 3333 Hwy 6 South
HS	Greater Houston	29.7247	-95.5036	0	Indoor Air Quality at 3333 Hwy 6 South
HM	Greater Houston	29.6258	-95.2675	0	Population Exposure at 9726 Monroe
HB	Greater Houston	29.8344	-95.4939	18	Population Exposure at 4420 Bingle
CC	Corpus Christi	27.8069	-97.4542	8	Population Exposure at 1111 Navigation Blvd.
DA	Dallas	32.7742	-96.7978	137	Population Exposure at 717 S. Akard
EP	El Paso	31.7569	-106.4828	1137	Population Exposure at 222 S. Campbell St.
SA	San Antonio	29.4153	-98.4847	198	Population Exposure at 900 E. Durango Blvd.

##### Temporal Characteristics:

**Temporal Coverage:**

03/11/1997 - 03/12/1998

**Temporal Coverage Map:**

Not Applicable.

**Temporal Resolution:**

Daily

**Data Characteristics:**

Please refer to the [Data Description Companion Document](#) for all data characteristics documentation.

**Sample Data Record:**

These data files are in the NARSTO Data Exchange Standard Format. This format is described in detail in the NARSTO Data Management Handbook (ORNL/CDIAC-112) and is available at the [NARSTO Quality Systems Science Center](#). The Data Exchange Standard uses ASCII files that are self-documenting with numerical and character fields of varying length separated by commas (i.e., \*.csv).

**Data Organization:****Data Granularity:**

This data set contains two data files:

Mass measurements of PM2.5 samples

(narsto\_txpm25\_tx\_13stns\_texaspm25\_mass\_a\_1day\_1997-03-11\_1998-03-12\_r1\_q2.csv)

and

Chemical composition of PM2.5 samples

(narsto\_txpm25\_tx\_13stns\_texaspm25\_chem\_a\_1day\_1997-03-11\_1998-03-12\_r1\_q2.csv)

A general description of data granularity as it applies to the IMS appears in the [EOSDIS Glossary](#).

**Data Format:**

These data files are in the NARSTO Data Exchange Standard Format. This format is described in detail in the NARSTO Data Management Handbook (ORNL/CDIAC-112) and is available at the [NARSTO Quality Systems Science Center](#). The Data Exchange Standard uses ASCII files that are self-documenting with numerical and character fields of varying length separated by commas (i.e., \*.csv).

**Data Manipulations:**

Please refer to the [companion reference document](#) by Tropp et al., 1998, for descriptions of all data manipulation and processing.

**Quality Assessment:**

The QSSC performed routine range checking of dates, times, and measurement values.

**Data Verification by Data Center:**

The Langley Data Center performs an inspection process on the data received by the data producer via ftp. The Data Center checks to see if the transfer of the data was completed and delivered in their entirety.

**6. Notes and Plans:**

Please refer to the [companion reference document](#) by Tropp et al., 1998, for any specific data usage notes, data limitations, and other relevant study information.

**7. Products and Access:****Contact Information:**

Langley Atmospheric Science Data Center  
User and Data Services Office  
NASA Langley Research Center  
Mail Stop 157D



Hampton, Virginia 23681-2199  
USA  
Telephone: (757) 864-8656  
FAX: (757) 864-8807  
E-mail: [support-asdc@earthdata.nasa.gov](mailto:support-asdc@earthdata.nasa.gov)

## Data Center Identification:

NASA Langley Research Atmospheric Science Data Center

## Procedures for Obtaining Data:

The Langley Data Center provides web interfaces that allow direct access to its data holdings for immediate downloading, for placing media orders, for searching the data holdings, and for ordering prepackaged CD-ROMs and videocassettes. All of these methods are easily accessible from the [Langley Data Center web site](#).

## Data Center Status/Plans:

The Langley Data Center will continue to archive these data.

## Output Products and Availability:

Data sets are available via ftp.

## Software:

### Software Description:

Not Applicable.

### Software Access:

Not Applicable.

## 8. References:

- NARSTO Data Management Handbook (ORNL/CDIAC-112). 1999. S.W. Christensen, T.A. Boden, L.A. Hook, and M.-D. Cheng. (preparation and electronic publishing by [NARSTO Quality Systems Science Center](#). Oak Ridge National Laboratory, Oak Ridge, TN, USA.
- Tropp, R.J., S.D. Kohl, J.C. Chow, and C.A. Frazier. 1998. [Final Report for the Texas PM2.5 Sampling and Analysis Study](#). Document No. 6570-685-7770.1F. Desert Research Institute (Prepared for M. Aguirre, Jr., Bureau of Air Quality Control, Houston, Texas), Reno, Nevada. (PDF)

## 9. Glossary and Acronyms:

### Glossary of Terms:

[EOSDIS Glossary](#).

### List of Acronyms:

[EOSDIS Acronyms](#)

PM2.5 - Particulate matter less than or equal to 2.5 micrometers in size  
DRI - Desert Research Institute, Reno, NV

## 10. Document Information:

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Document Review Date:

Last Date Modified:

**Document Curator:** Langley Atmospheric Science Data Center

User and Data Services Office

NASA Langley Research Center

Mail Stop 157D

Hampton, Virginia 23681-2199

USA

Telephone: (757) 864-8656

FAX: (757) 864-8807

E-mail: [support-asdc@earthdata.nasa.gov](mailto:support-asdc@earthdata.nasa.gov)

